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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,577	07/02/2003	Koichi Yoshihara	7674 US	4481
30078 7590 11/27/2007 MATTHEW D. RABDAU TEKTRONIX, INC. 14150 S.W. KARL BRAUN DRIVE P.O. BOX 500 (50-LAW) BEAVERTON, OR 97077-0001			EXAMINER WANG, TED M	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/613,577

**Applicant(s)**

YOSHIHARA, KOICHI

**Examiner**

Ted M. Wang

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-7 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,9 and 10 is/are rejected.
- 7) ☒ Claim(s) 4-7 and 11-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, filed on 9/18/2007, with respect to the rejection(s) of claim(s) 2-7 and 9-14 under 35 USC 112 first paragraph and 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Takao et al. (US 5,920,220).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application in view of Takao et al. (US 5,920,220).

- With regard claim 2, the admitted prior art of the instant application discloses an apparatus for displaying a modulated signal representing symbols of information to observe distortions (page 11 lines 10-15 and Fig.15 without elements 30 and FACTOR to LPFs 24 and 26) comprising:

means for deriving quadrature component signals and a symbol clock from the modulated signal (page 11 lines 12-14 and Fig.15 without elements 30 and FACTOR to LPFs 24 and 26);

means for generating a sample clock having a period equal to the symbol clock (page 11 lines 12-14 and Fig.15 without elements 30 and FACTOR to LPFs 24 and 26);

means for sampling the quadrature component signals with the sample clock (Fig.15 element 34 and page 11 lines 10-15) to produce constellation symbols (Fig.2); and

means for displaying the symbols on a quadrature coordinate plane (Fig.2 and page 2 lines 1-23).

The admitted prior art of the instant application discloses all of the subject matter as described in the above paragraph except for specifically teaching (a) the sample clock being shifted one-half period in phase with respect to the symbol clock and (b) means for sampling the quadrature component signals with the sample shifted clock to produce pseudo-symbols as pairs of pseudo-symbols about a symbol sample point for each symbol.

However, Takao et al. teaches (a) the sample clock being shifted one-half period in phase with respect to the symbol clock (Fig.11 and Fig.13(f) and column 15 lines 51-52) in order to controlling the amount of phase shift of phase shift circuit 7 on the basis of this calculation result, a leading edge or trailing edge of corrected clock signal  $t_0$  can be brought into alignment with the optimum clock

timing (Fig.15 lines 21-24) so that the distortion can be easily detected to improve the quality.

Page 11, lines 1-16 of the instant application describes a typical receiver of a modulated signal as modified according to the instant application. It teaches that the instant application is different from the conventional receiver by inserting a delay module between STR 28 and A/D converters 32, 34 to provide the sample clock which has the same period as the symbol clock but is delayed in phase with respect to the symbol clock by one-half period as recited in page 11, lines 1-20. Thus, with the critical or essential element, MOD DELAY (Fig.15 element 30), the pseudo-symbol will be generated. As described above, the modified circuit of the admitted prior art of the instant application and Takao et al. samples the quadrature component signals with the sample shifted clock that will inherently generate pseudo-symbol as claimed in claim 2.

Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the clock timing recovery circuit 5a as taught by Takao et al. in between STR 28 and ADCs 32 and 34 of the admitted prior of the instant application to control the amount of phase shift of phase shift circuit 7 on the basis of this calculation result, a leading edge or trailing edge of corrected clock signal  $t_0$  can be brought into alignment with the optimum clock timing (Fig.15 lines 21-24) so that the distortion can be easily detected to improve the quality.

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- With regard claim 9, which is a method claim related to claim 2, all limitation is contained in claim 2. The explanation of all the limitation is already addressed in the above paragraph.

4. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application and Takao et al. (US 5,920,220) as applied to claim 2 above, and further in view of Touzni et al. (US7,031,405).

- With regard claim 3, the admitted prior art of the instant application and Takao et al. disclose all of the subject matter as described in the above paragraph except for specifically teaching means for generating a template for the displaying means representing an ideal modulated signal.

However, Touzni et al. teaches means for generating a template for the displaying means representing an ideal modulated signal (Fig.3 and column 5 lines 12-30) in order to provide the constant modulus (CM) criterion to the system for easy calculating the dispersion constant so applying a CM criterion to the constellation does not penalize spatial rotation of the constellation due to residual carrier offset. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include means for generating a template for the displaying means representing an ideal modulated signal as taught by Touzni et al. into the modified conventional receiver as described by the admitted prior art of the instant application (page 11 lines 1-16) and Takao et al. so as to provide the constant modulus (CM) criterion to the system for easy calculating the dispersion constant so applying a CM criterion to the constellation

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does not penalize spatial rotation of the constellation due to residual carrier offset.

- With regard claim 10, which is a method claim related to claim 3, all limitation is contained in claim 3. The explanation of all the limitation is already addressed in the above paragraph.

### ***Allowable Subject Matter***

5. Claims 4-7 and 11-14 are objected to as being dependent upon an objected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M. Wang



Ted M Wang  
Examiner  
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